

## Preface

The Nineteenth Symposium on Polar Biology, sponsored by the National Institute of Polar Research (NIPR), was held on December 5 and 6, 1996 at NIPR in Tokyo. This annual international symposium aimed to compile new scientific results in all fields of biological research in the polar and sub-polar regions. Sea ice ecology and flux study and lake ecosystem study in polar regions were main themes of the symposium. A total of 14 oral and 75 poster presentations were given at the Symposium as seen in the program in the last pages of this volume. Among them, 32 and 58 presentations were on terrestrial and marine biology, respectively.

The present volume of the proceedings includes 16 full-length papers from the presentations. We hope that this volume will give readers fundamental information and some of the feeling of frontiers in polar biology, which could be utilized for the protection of the Arctic and Antarctic ecosystems and which might encourage further research in the regions as well.

This volume was edited under the direction of the Editorial Board of NIPR with the help of a sub-editorial board consisting of;

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